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ABSTRACT

The Library of Congress Subject Headings (LCSH) Entry Vocabulary Project established a routine procedure for new cross references, suggested by designated libraries, to be considered for addition to LCSH entries by the Library of Congress Subject Catalog Division. Since October 1982, suggestions from four libraries (the University of California at Berkeley, Duke University, Harvard University, and the National Library of Canada) have been channeled into the weekly review process at the Library of Congress (LC). If accepted, the new "see" cross-references are published in the LC "Weekly List." This report contains an executive summary, instructions for submitting "see" references, sample forms for this process, a list of LC procedures for processing "see" reference suggestions, an assessment of the project by LC's Mary K. D. Pietris, recommendations for continuance and expansion of the project, and examples of suggested references that came from other subject heading lists and should be added to LCSH. An appendix presents "Using LCSH as a Subject Access Tool in Online Public Access Catalogs" by Pauline Cochrane, who describes the subject access features of online catalogs presently in use and recommends the improvement of LCSH for this purpose. (Author/ESR)

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LCSH ENTRY VOCABULARY PROJECT

Final Report

to the

Council on Library Resources

and to the

Library of Congress

by

Pauline A. Cochrane

March, 1983

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EXECUTIVE SUMMARY

The objective of the LCSH Entry Vocabulary Project (EVP) was to establish a routine procedure for new entry vocabulary (i.e., see cross references) to be suggested and considered for the Library of Congress Subject Headings (LCSH). This procedure was to facilitate the receipt of suggestions from libraries so that they could be easily channeled into the weekly review process at the Library of Congress.

The project began in March, 1982 and the objective was achieved before October 1, 1982. The routine procedure is now in place and is being used at four different libraries (University of California at Berkeley, Duke University, Harvard University, and the National Library of Canada). Receipts from these sites come to the Subject Catalog Division of the Library of Congress and the suggestions are reviewed routinely by section heads and/or subject catalogers, who in turn, either pass on the suggestions for new cross references to the Weekly Editorial Review Committee or reject the suggestions and return them to the proposer, with an explanation. The Weekly List for October 4, 1982 contained the first suggestions which went through following this procedure. By October, more than 100 suggestions had been received and were in the pipeline.

An assessment of the project by the Library of Congress is reported here with recommendations for continuance and expansion of the process. A public notice of this project appeared in a 1982 issue of the RTSD Newsletter. A separate paper on the impact of having LCSH available for use in online catalogs was also prepared and appears in the appendix.

INTRODUCTION

The work described in this report was funded March-September 1982 through the Bibliographic Service Development Program of the Council on Library Resources. The project addressed one of the recommendations made at the Subject Access Meeting the Council sponsored in Dublin, Ohio, June 7-9, 1982: to develop and establish a mechanism whereby reference librarians and catalogers from several libraries could suggest see references to the Library of Congress for inclusion in the Library of Congress Subject Headings (LCSH).

The title of the original proposal for this project, submitted to the Council on Library Resources early in 1982, was: Improved Subject Access in Online Catalogs -- Through Improved LCSH Entry Vocabulary. From the outset, it was assumed that the efforts of the project director (Pauline A. Cochrane) would be coordinated with the staff at the Library of Congress (specifically Lucia Rather and Mary K. Pietris) and that the collaboration would have to result in a routine procedure acceptable to the Library of Congress Subject Catalog Division or the project would have been a failure. It is heartening to report that this is a final report of a successful project as well as a progress report of work in progress which shows every sign of continuing for an indefinite period. (See the assessment of the project by M.K.D. Pietris later in this report.)

This brief final report does not incorporate sections of earlier progress reports, but it does contain enough about the procedures to show others what was done and how. The bulk of this report documents the routine procedures established for revising the entry vocabulary of LCSH by using suggestions sent to LC by cooperating libraries.

As the picture of how LCSH revision procedures will be affected by the online edit/update procedures now being planned at the Library of Congress (Subjects, Release 1.0) and the use of LCSH in online catalogs is still somewhat hazy, the last section of this report is a paper which serves as a parenthetical comment on some of the issues involved.

I. INSTRUCTIONS FOR SUBMITTING SEE REFERENCES
(See Figures 1 and 2)

1. Type suggested lead-in heading. (See LCSH in microfiche and supplements to verify that cross reference does not now exist in LCSH; review Library of Congress-Subject Catalog Division Policy Statement H373, revised, to check on the legitimacy of such a cross reference.)

2. Type in: See
and (LCSH heading which has been checked for accuracy).

3. Give reason(s) for suggested cross reference, e.g., better patron access, user problem, new terminology noticed in newspaper, etc. (See Cataloging Service Bulletin, Spring, 1982, p. 52-55.)

also

Space for LC Card Number (If a given title was being handled when idea for new cross reference occurred.)

4. Type initials of person and date. (Here or on back of card, given name and address of library.)

---

5. Send cards (batched for library) on weekly basis to:

Mary K. Pietris
LCSH-EVP Coordinator
Subject Catalog Division
Library of Congress
Washington, D.C. 20540

Note: Space is provided for LC report on suggested see reference (see Figure 3).

SCD action information: approved or disapproved, with date. (If suggestion is disapproved, reason will be given on reverse side before card is sent back to suggestor.)

Figure 1.

FORM FOR SUGGESTED SEE REFERENCE

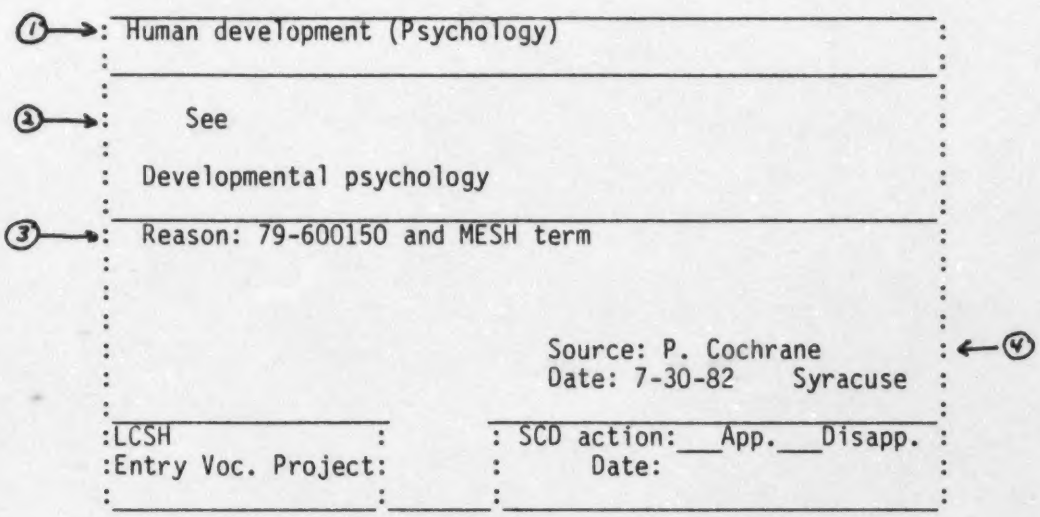


Figure 2.

BLANK FORM OF EVP CARD WHICH COULD BE COPIED FOR USE BY COOPERATING LIBRARY

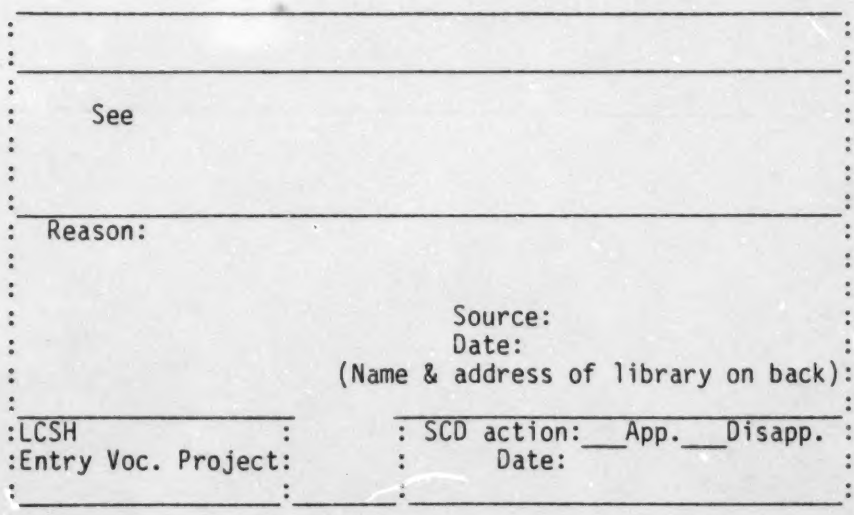
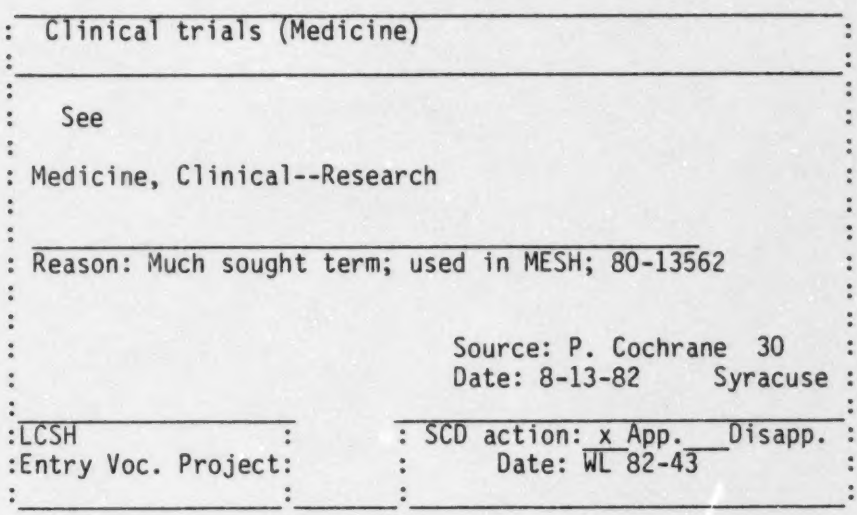


Figure 3.

EXAMPLE OF CARD UPON ITS RETURN TO LIBRARY

If suggestion is disapproved, reason for disapproval would appear on the back of the card.



II. PROCEDURES AT THE LIBRARY OF CONGRESS TO PROCESS SEE REFERENCE (ENTRY VOCABULARY) SUGGESTIONS FROM COOPERATING LIBRARIES

(As of 10/82)

Flow of Work:

0. SCD Chief receives pack of cards from libraries and forwards to EVP Coordinator.

1. Coordinator:

   a. receives cards and gives to clerk for xeroxing.
   b. determines which SCD section will review suggestions, batches xerox slips for distribution after being dated.
   c. notes on original card when and to whom suggestion is sent.
   d. files cards by institution.

2. Section Head:

   a. receives suggestions, considers them, and refers to a cataloger, if appropriate.
   b. returns suggestion to coordinator if to be referred to another section.
   c. if disapproves suggestion, writes the reason on a waste card, attaches it to xerox copy of suggestion and returns to coordinator having dated slip.
   d. checks on status of suggestions distributed within section, determining reasons for outstanding suggestions after one month.

3. Section Head/Cataloger:

   a. considers suggestion and gets approval for research that would require more than 15 minutes.
   b. if approves suggestion, prepares either a see reference or a new heading according to the usual manner, including preparation in-process card, citing authority for proposal on back of scatch card. This proposal card is penciled with the letter C in the upper left corner of the card. (See Figures 4B & C).
   c. paperclips the xerox of suggestions behind the proposal card, and turns the proposal in to editorial as usual.

   or

   d. if disapproves suggestion, (see Figure 4A) returns the xerox copy of suggestion to the coordinator with a note of explanation, e.g.:

      1) Not accepted; candidate for future new subject heading,
      2) Resubmit with justification for this reference,
      3) Resubmit with additional justification for this reference,

4) Need authority for regarding these terms as identical concepts,
5) LC will need to investigate problems in regard to this suggestion,
6) Does not conform to LC policy stated in _____.

then

e. records the time spent under "indirect time" as Coop (in 5 min. intervals).

4. Editorial:

a. handles the proposal as usual, giving the card a priority just below that of a CIP.
b. annotates the weekly list with "C" next to proposal (see Figure 5, Example of Weekly List)
c. after the approved list is prepared in Editorial (for each weekly meeting where proposals may be approved, held, or resubmitted), the editor responsible for the list retrieves copies of the proposals, annotates the copy with the WL number, notes disposition, and returns cards to the coordinator.

5. Coordinator:

a. whenever necessary, seeks clarification from section head, or Office of Principal Catalog concerning unapproved suggestions.
b. investigates proposals that do not appear on Weekly List or are not returned within a month.
c. reports back to the proposing institution at least once a month (see Figures 4A-C).
d. keeps statistics by institution of total number of proposals received, number accepted, made into heading, and number disapproved/rejected.

Figure 4.

EXAMPLES OF CARDS AFTER REVIEW OF SUGGESTED SEE REFERENCES

(A)

Town halls

See

Municipal buildings

Reason: User problem with synonym

Source: UCalif-B
Date: 8/82

SCD action: App. x Disapp.
Date: 10/82

Verso of card:
Reason for disapproval: "Anticipated as new heading."

(B)

Public policy

See

Subdivision Government policy under topics

Reason: 80-118071 and many other headings, and titles

Source: P. Cochrane
Date: 8-13-82 MESH18

LCSH
Entry Voc. Project:

SCD action: x App. Disapp.
Date: WL 82-40

Figure 4. (continued)

(C) Behavioral Physiology

See

Psychology, Physiological

Reason: 80-26868; in MESH; useful access point

Source: P. Cochrane 1
Date: 8-13-82 Syracuse

LCSH	SCD action: x App. Disapp.
Entry Voc. Project:	Date: WL 82-43

Figure 5.

EXAMPLE OF WEEKLY LIST (WITH (C)--SEE REFERENCE SUGGESTIONS)

SUBJECT CATALOGING DIVISION
L. C. SUBJECT HEADINGS TENTATIVE ADDITIONS AND CHANGES
Weekly List No. 44 NOVEMBER 1, 1982

Changes and cancellations are indicated by an asterisk. '(A)' indicates approved proposals for materials in priority 1.

(A) Airplanes--Salvaging
x Salvage (Airplanes)
xx Aeronautics--Accidents
Salvage (Waste, etc.)
Airplanes--Great Britain
Airplanes--Great Britain-Salvaging
sa Operation Victor Search
*Salvage (Airplanes) (Indirect) CANCEL
* --Great Britain CANCEL
(A) See BARNS--RECYCLING
Barns--Remodeling for other use
(A) Barns--Salvaging
xx Wrecking
Example under Salvage (Waste, etc.)
(A) Buildings--Recycling
See Buildings--Remodeling for other use
(A) Buildings--Salvaging
xx Salvage (Waste, etc.)
Wrecking
(A) Salvage (Waste, etc.)
* Here are entered works on reclaiming and reusing equipment, parts, structures, etc. Works on the processing of waste paper, cans, bottles, etc. are entered under Recycling (Waste, etc.) CHANGED NOTE
* sa subdivision Salvaging under subjects, e.g. Barns--Salvaging
(A) Recycling (Waste, etc.)
* Here are entered works on the processing of waste paper, cans, bottles, etc. Works on reclaiming and reusing equipment, parts, structures, etc. are entered under Salvage (Waste, etc.) CHANGED NOTE
* sa subdivision Recycling under subjects, e.g. Waste paper--Recycling; Glass waste--Recycling
(C) Aluminium
See Aluminum
(C) Anthropo-geography
* x Geography, Cultural
* Geography, Human
(C) Appropriate technology
See Underdeveloped areas--Technology

III. ASSESSMENT OF THE ENTRY VOCABULARY PROJECT

by Mary K. D. Pietris
Chief, Subject Catalog Division, Library of Congress

February 24, 1983

The cooperating libraries for this project were suggested by the Library of Congress and chose to participate in the project. Each library was visited by the project director (Pauline Cochrane), who arranged an orientation session for the staff. In each case an EVP coordinator for that library was appointed.

Cooperating Libraries

Duke University (Janie Morris, EVP Coordinator)

Harvard University (Peter Lisbon, EVP Coordinator)

National Library of Canada (David Balatti, EVP Coordinator)

University of California at Berkeley (Jean M. Peck, EVP Coordinator)

Other input came from:

National Library of Australia

P. Cochrane, who studied MeSH-LCSH cataloging of 300 books, Australia List of Subject Headings (FLASH); Hennepin County Public Library (HCPL) list, and others.

Summary Statistics

By the end of 1982, 246 proposals had been received. Of those, 49 remained in process in the Subject Cataloging Division. Of the 197 that have been evaluated,

86 have been accepted as see references

4 led to the establishment of new suoject headings

107 were returned to the cooperating library, either disapproved as proposed, or with a request for further information.

No tally was kept by category for suggestions that were returned to the cooperating library. The reasons for disapproval of a suggested see reference include the following:

1. The proposed reference should, in fact, be a subject heading, and the Library of Congress would establish a suitable heading for the next work received on that subject.

2. Terminology in the field is sufficiently blurred or unsettled that it is not known exactly what a popular phrase refers to, each person or context having a different interpretation. "High technology" or "high tech" is such a phrase.

3. The proposed reference violated general policy concerning the establishment of see references, e.g.:

a. The proposed reference was already covered by a general reference,
b. The proposed reference was made to free-floating subdivisions,
c. The proposed reference was not synonymous with the heading,
d. The proposed reference was awkward or incorrect.

4. The proposed reference duplicated an earlier proposal or was already in the system.

5. The proposed reference referred to a heading that LC was considering changing.

6. Additional information was needed to understand the proposal.

Evaluation by the Library of Congress

The Project has been valuable in that it has filled in some gaps in see reference structure in our printed list. Some references were ones that should have been made as a matter of course by LC but had not in fact been made, such as "Central Africa, see Africa, Central." Another reference (Ancient history, see History, Ancient) had existed in the 8th edition of LCSH but was absent in the 9th, without any evidence that we had deliberately deleted it. Other references provided synonyms that we had failed to include (Consortism, see Symbiosis).

It took far longer for proposals to be evaluated at LC than had originally been anticipated. The expectation that proposals could be evaluated in three to six weeks was wildly optimistic, given the fact that catalogers had to evaluate the proposals while continuing to catalog high priority books. In some subject areas the pressure of daily work coupled with staff vacancies made it difficult to do the research necessary to determine whether proposed references were in fact valid.

The return rate of approximately 60 per cent showed that our communication to the cooperating libraries regarding the kinds of see reference that were acceptable needed to be clearer. In particular, the requirement that see references should be synonymous or verbal variants of the allowed term needs to be more clearly stressed. A see reference should not have been proposed when a new and more specific subject heading is clearly more appropriate.

Finally, the project revealed that our guidelines for the making of see references need to be re-evaluated and made more explicit, with additional instructions required to cover policies not written down.

Recommendations

1. The number of cooperating libraries should be extended to eight or ten, but only after the Library of Congress has provided a full-time person to handle this and other cooperative projects. It is difficult for a project such as this to be handled by someone whose other duties need full-time attention.

2. The control mechanism inside LC should be altered so that reports back to participating libraries are more frequent and timely.

3. Present participants should be contacted to determine whether they wish to continue as project participants.

4. Instructions about the kinds of see references that are desirable or acceptable should be revised to take into account what has been learned during the project and distributed to participants.

5. A brief semiannual meeting of the participants should be held, perhaps at ALA midwinter and annual meetings in order to keep communication channels open and to inform participants about related developments at LC.

6. This and any other cooperative project place an extra work load on the staff at the Library of Congress. Some means to ensure that this additional work can be accommodated without disruption to existing work obligations must be found in order for the project to continue smoothly.

Epilogue

An informal meeting with three of the four participants was held at ALA Midwinter in San Antonio and was believed to be useful.

The Library of Congress is planning to hire a coordinator for subject cataloging cooperative projects in the late spring or early summer of 1983.

IV. CONCLUSIONS

Several recommendations were offered to the principal participants in this project, namely Library of Congress staff and the librarians in the cooperating libraries. Many were accepted and have been incorporated into the assessment report in the preceding section.

One recommendation was not incorporated into the report by M.K.D. Pietris because of the strain it would place on SCD, but it is repeated here in case some other library staff could possibly do it. Project time should be available to subject catalogers who may research other vocabulary lists in order to improve the LCSH Entry Vocabulary more systematically. For example, IAC, publishers of the database Magazine Index, gave this investigator a list of all the see references they had added to their version of LCSH (in machine-readable form) as of June, 1982. This list contains more than 350 see references. Checking each and every reference against LCSH in microfiche before submitting these to EVP suggestions would have consumed more time than allotted for this project, but an experienced subject cataloger might be able to glean a great many references from the list at a glance. This list and the Hennepin County Public Library list (available in machine-form and in microfiche) might also prove to be a useful list for cross references to popular topics and current events. Other subject vocabulary lists could enrich the vocabulary in specialized areas. See examples from FLASH and HCPL in Figure 6.

During my time in the Subject Cataloging Division at the Library of Congress I came to appreciate even more fully how arduous is the task of the subject cataloger who must be productive and "push the books through" while at the same time work with files and procedures which are dispersed and often difficult to use. The automation of the subject authority files at the Library of Congress will help their task, but it is my final recommendation that a special staff assignment should be made in SCD so that there could be an investigation of the impact of online systems on the subject cataloging process and on the subject authority file we loosely call LCSH. Only someone in the Office of the Principal Cataloger, with experience as a subject cataloger, could perform such a task successfully. They would have to work closely with Automated Systems Office personnel at the Library of Congress over the next few years.

Figure 6.

EXAMPLES OF EVP SUGGESTIONS WHICH CAME FROM OTHER SUBJECT HEADING LISTS

Flats (Housing)		
See		
Apartments		
Reason: Needed synonym for users; in FLASH, HCPL		
		Source: P. Cochrane Date: 8-13-82 Syracuse
LCSH Entry Voc. Project:		SCD action: ___App. ___Disapp. Date:

War veterans		
See		
Veterans		
Reason: Needed by users looking under War; in FLASH		
		Source: P. Cochrane Date: 8/13/82 Syracuse
LCSH Entry Voc. Project:		SCD action: ___App. ___Disapp. Date:

Figure 6. (continued)

Young persons		
See		
Youth		
Reason: Needed synonym for users; in FLASH		
	Source: P. Cochrane Date: 8-13-82 Syracuse	
LCSH		SCD action: ___App. ___Disapp.
Entry Voc. Project:		Date:

Wireless (Radio)		
See		
Radio		
Reason: Needed by users; in FLASH		
	Source: P. Cochrane Date: 8-13-82 Syracuse	
LCSH		SCD action: ___App. ___Disapp.
Entry Voc. Project:		Date:

Figure 6. (continued)

Wildlife		
See Animals Zoology		
Reason: In use in FLASH; HCPL. Needed by users		
	Source: P. Cochrane Date: 8-13-82 Syracuse	
LCSH Entry Voc. Project:		SCD action: x App. Disapp. Date: WL 82-43

Typing		
See Typewriting		
Reason: Synonym in use by public; in FLASH and HCPL List		
	Source: P. Cochrane Date:8-13-82 Syracuse	
LCSH Entry Voc. Project:		SCD action: x App. Disapp. Date: WL 82-42

ACKNOWLEDGMENTS

I owe a debt of gratitude to Carol Mandel for including the suggestion for such a project in her report; to C. Lee Jones and Warren J. Haas for the financial wherewithal to carry on the project; to Lucia Rather and Mary K. Pietris for their many suggestions and critical comments which led to a successful completion of the project; and to the subject catalogers at LC and the librarians in the cooperating libraries, without whose effort this project could not have been implemented.

APPENDIX

Using LCSH as a Subject Access Tool in Online Public Access Catalogs

by
Pauline A. Cochrane

As the LCSH Entry Vocabulary Project was seen as an effort to improve LCSH for use in online catalogs and not as an effort to improve LCSH per se, it is considered worthwhile to review the expected use of LCSH in that context. Not many online catalogs were initially designed with a subject authority in mind, not to mention suggestive prompts built into browse displays which would lead the naive catalog user through the maze of cross references and related terms, main and topical, geographic, and chronological subdivisions used in the subject tracing on MARC records. Since the results of the recent Council on Library Resources OPAC User Survey report a preponderance of subject searching online, many system designers are enhancing their original online catalog designs with subject access features. Ohio State University's LCS system will soon have such a browsing display:

```
SUB/Black Americans
...
14  1 Bka-rgyud-pa (Sect)-- Rituals
15    Black Americans
16      SEE  Afro-Americans
17  1 Black Art--Addresses, essays, lectures
...
TBL/16
     AFRO-AMERICAN                  (307 titles)
01 Owens, Don Benn.    The Most controversial American.... .... FBR
02 Jones, Marcus E.    Black migration in the United States 1980 FBR
03 Wilder, Margaret G. Black assimilation in the urban env. 1979 FBR
...
SUB/Afro-Americans
11    1 Afro-American youth--New York (N.Y.)
12    2 Afro-American youth--Pennsylvania--Philadelphia
13    3 Afro-American youth--Psychology
14    1 Afro-American youth--Religious life
15  307 Afro-Americans    7 sa
...
ENTER TBL/AND LINE NO. FOR TITLES; SAL/ and LINE NO. FOR SEE ALSO REF
SAL/15
 307 Afro-Americans
 see also:   7
   3 Afro-Americans and libraries
   1 Associations, Institutions, etc.--Membership, Afro-American
  25 Freedmen
 ...
```

MELVYL, the online catalog at the University of California, now permits a browse display, with no results reported, of all subject headings with the keyword to be searched. They are exploring ways to incorporate cross references into their displays, perhaps in a way similar to how they handle cross references from the Name Authority File (e.g., Mark Twain is also known as....).

On SCORPIO at the Library of Congress, LIV (Legislative Indexing Vocabulary), not LCSH, can be displayed online using a command called LIVT. Here is the display one could see if "LIVT Biomass energy" was entered:

```
BIOMASS ENERGY
          (Energy produced by conversion of vegetable matter.  Technically
          feasible processes to generate fuels from biomass include
          fermentation to produce methane and alcohol, chemical processes to
          produce methanol, and pyrolysis to convert waste to low Btu gaseous
          fuels and oils.)
     Used for:
          Microbial energy conversion
     Broader terms:
T01       ALTERNATIVE ENERGY SOURCES
T02       FUEL
T03       POWER RESOURCES
     Related terms:
T04       REFUSE AS FUEL
READY FOR NEW COMMAND:
```

If the online user had entered "LIVT Microbial energy conversion" instead, SCORPIO would have shown the same display with a new header:

"Microbial energy conversion is indexed under.... "

In two of these systems the subject authority file, with see references, is being used to re-direct the user to the established heading and related references. In one case the user's effort is minimal; in the other additional keying is necessary. In neither case is the user prompted to consider the main headings plus subdivisions, although these can be displayed, if one knows how to do it.

The variation we can expect in online catalog subject access tools is probably limitless, but as always it will depend on what is provided in the subject authority file. Already a plea is being heard from the library profession to make LCSH in machine-readable form as complete as possible. (See the "Holly report", LC Subject Authority Control: Scope, Format, and Distribution; a Final Report by the Ad Hoc Subcommittee submitted to the Subject Analysis Committee, CCS, RTSD, ALA on July 12, 1982). As the second major function of LCSH is seen to be the provision of a cross reference structure which links related terms and which directs one from unused to used

terms, the second recommendation of this report calls for "a machine-readable subject authority file which includes all subject headings and cross references which are created by the Subject Cataloging Division" and the seventh recommendation calls for the inclusion of "the reference structure for commonly used subdivisions" which now only appears in a separate publication entitled "LCSH: a Guide to Subdivision Practice". The cross reference structure of LCSH and the use of free-floating subdivisions seem to be recognized at the outset as two areas where LCSH will have to change to be most useful in the online catalog environment. It is suggested that if the machine-readable form of LCSH does not include all the headings (and references) which appear on MARC records, we will not have a complete subject authority file which can be used to enhance online subject access.

There are other problems and considerations which were not addressed by the Holley report but which are seen to create a less than optimum environment for the online subject searcher. The display of all the subdivisions under a main heading can take up to 20 CRT screens to display (see Cochrane article in Research Libraries in OCLC, January, 1982)! No one has yet focused on the solution to this problem except, perhaps Charles Goldstein in the experimental version of ILS at Lister Hill/NLM. The display of see references, if limited to those created for the card catalog and printed in "the Red Book" (meaning LCSH 9th) may not include the most useful directional signals for the online catalog user. Catalog use research is turning up some interesting case studies and typologies of subject searching. We should be incorporating some of those findings into online subject access features, and the Subject Catalog Division of the Library of Congress may have to take a careful look at how online catalog design will impact on the current practices and policies relating to LCSH cross reference structure and subdivisions (freefloating, etc.) Pattern headings, for example, may have to be specifically tagged in order to guide the online user through all the headings of a certain type, something not done specifically in the "Red Book". General reference notes may have to be redesigned and incorporated into the machine-readable LCSH as special records. Some notes on the currency of headings may have to be incorporated to allow use of the machine-readable LCSH with older files, such as REMARC.

There are groups such as AAT (Art and Architecture Thesaurus) group who feel that the cross reference structure of LCSH will never allow adequate online subject access. They propose to replace it with the tree structure of MeSH which can provide the linkages between terms which are logical, consistent, and displayed in a helpful array.

Many system designers think the formal pre-coordinated LCSH string should be freely accessed, word by word, or permuted, as in MELVYL, using a KWIC-like word-in-context display. Still others feel a basic index of all subject-bearing words should be created from the MARC records and that that will be enough for browsing lists, Boolean searches, and the like. This later group sees no value in mounting a separate subject authority file like LCSH on an online catalog. They would place the burden for thinking of synonyms on the user and the burden for finding related terms might be placed on some algorithm in the computer for defining relatedness. Synonyms are not the only

problems facing online catalog searchers. Until the entry vocabulary of LCSH is vastly improved, and because of the vagaries and inconsistencies in LCSH, it will behoove any OPAC designer to build in some user aids which will prompt their users to look at their subject search statements in a variety of ways. A report of our analysis of the functions of see references in LCSH may help design those user aides. We discovered at least four types of lead-in vocabulary to redirect the user and help improve access:

A. Word-order changes caused by inversion of multi-term headings, subdivision or phrase headings, parenthetical qualifiers, etc.

B. Alternative forms such as popular or technical terms, foreign or English language terms, old or new terms, alternative coined phrases, synonymous subdivisions.

C. Grammatical variants such as spelling, singular or plural forms, adjectival or noun forms.

D. Related term scattering with need for point of access to more general terms (sometimes called "upward" see references), quasi-antonyms, cluster terms, etc.

Given all these developments, what might the providers of LCSH, namely the Subject Catalog Division of the Library of Congress, do? The answer to that important question is outside the purview of this project, but it is my opinion that this is one of the most important questions facing LC/SCD today. The question will not go away and the need to improve LCSH for use in online catalogs will become greater as time goes on. The task can not be done at LC/SCD alone. The series of LCSH Institutes now being held around the country, this EVP project, and the workshops being sponsored by the Council on Library Resources to bring LC Personnel together with library researchers, online catalog designers, and library managers to focus on online subject access should have a very positive effect on future efforts.

The entry vocabulary project may expand into a larger cooperative effort between the Library of Congress and other research libraries. Some of the other recommendations in the Mandel report should also be pursued. Bibliographic database producers, be they abstracting and indexing services or libraries, should be contemplating ways to integrate and link their vocabularies as all the signs point to further efforts to cross-file search facilities online. Who better than the keepers of the vocabularies of these files to plan such developments?

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